

# Dist2Walls V1.5

## - User Guide -

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## 1 Dist2Walls : compute wall distance for arrays/pyTrees

### 1.1 Preamble

Dist2Walls computes wall distance for arrays/pyTrees with structured meshes.

For use with the Converter array interface, you must import the Dist2Walls module:

```
import Dist2Walls as DTW
```

Then, in the following, *a* is an array, and *A* a list of arrays.

For use with the pyTree interface, you must import the module:

```
import Dist2Walls.PyTree as DTW
```

Then, in the following, *a* is a zone node and *A* is a list of zone nodes or a complete pyTree.

### 1.2 Module functions

For array interface, compute wall distance with respect to bodies:

```
b = DTW.distance2Walls(a, bodies) .or. B = DTW.distance2Walls(A, bodies)
```

For pyTree interface, if the pyTree tree or base is set, then the distance to the wall is computed from all the bodies defined in bodies. Argument bodies is optional: if bodies is not defined then the bodies are extracted from the tree/base in a single base:

```
b = DTW.distance2Walls(tree, bodies) .or. B = DTW.distance2Walls(base, bodies)
```

(See : Examples/dist2walls/distance2Walls.py)

### 1.3 Example files

Example file : Examples/dist2walls/distance2Walls.py

```

# - distance2Walls (array) -
import Dist2Walls
import Generator as G
import Transform as T
import Converter as C
import Geom as D

# Bloc dont on cherche la distance a la paroi
a = G.cart((0.,0.,0.),(0.1,0.1,0.1),(10,10,10))

# Paroi
sphere = D.sphere((1.2,0.,0.), 0.2, 100)

# Calcul de la distance a la paroi
dist = Dist2Walls.distance2Walls([a], [sphere])
a = C.node2Center(a)
a = C.addVars([a, dist[0]])
C.convertArrays2File([a], 'out.plt')

```